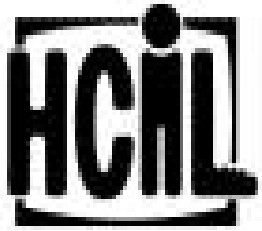
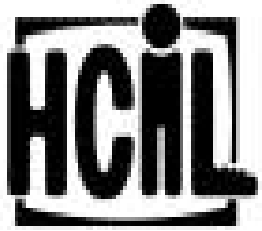


A Dynamic Query User Interface to EOSDIS

EOSDIS Technology Transfer Workshop (Nov. 13-17, 1995)

HAIS, Landover, Maryland

A Dynamic Query User Interface to EOSDIS



URL: http://www.cs.umd.edu/projects/hcil/eosdis

(funded by NASA GSFC)

- Khoa Doan
- Catherine Plaisant
- Ben Shneiderman

Human Computer Interaction Laboratory and
Department of Computer Science
University of Maryland

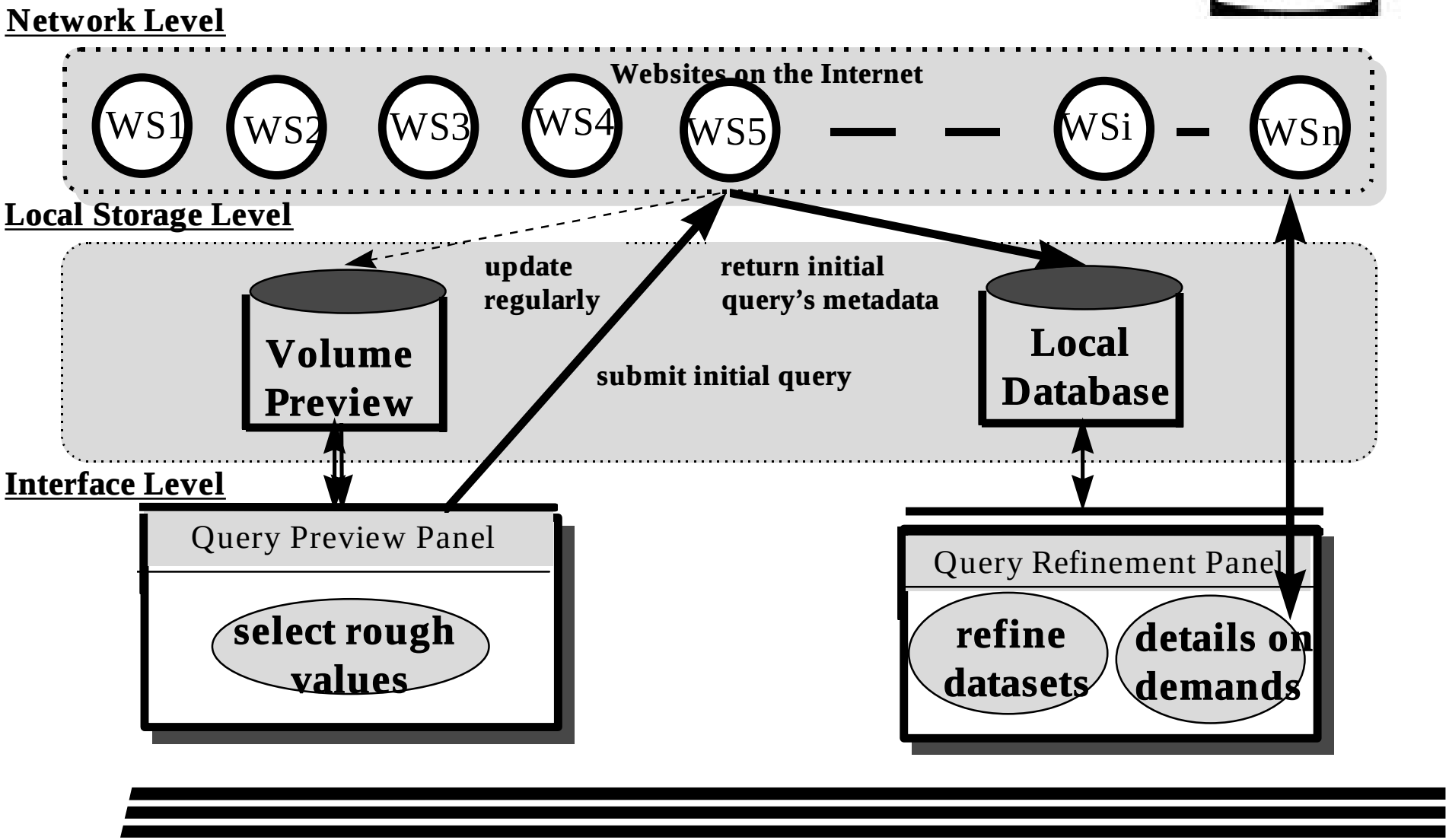
Outline:

- Objectives;
- Query Preview Approach;
- UI Archiecture;
- Visual Basic Prototype;
- Unix Prototype Demo;
- Summary and future work

Two-Phase Query Formulation Approach

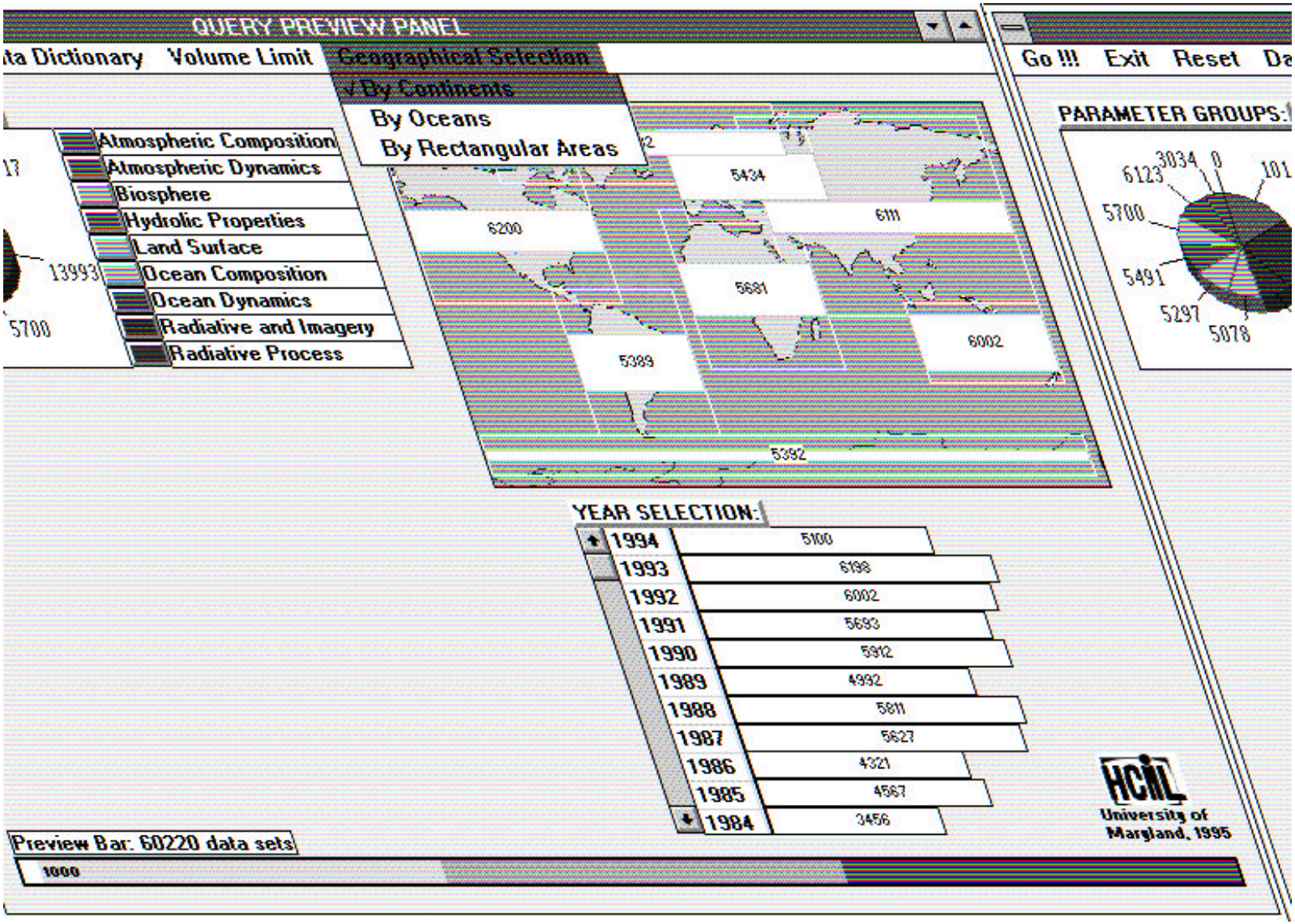
	Query Preview	Query Refinement
No of DataSets	Very Large	Manageable (selectable for details-on-demand)
No of Attributes	Limited	More or all the attributes
Attribute Values	Rough Ranges	More Precise or Exact Values

UI Architecture



Overview on UI to EOSDIS

- The Query Preview Panel
  - Data Set Level
  - Meta Data and Meta Values
  - Attribute Preview Bars
  - A Query Preview Bar
- The Query Refinement Panel
  - Granule Level
  - Precise Value
  - Starfield Display for Details on Demands


QUERY PREVIEW PANEL
ta Dictionary
Volume Limit
Geographical Selection
By Continents
By Oceans
By Rectangular Areas
Go !!!
Exit
Reset
Da
PARAMETER GROUPS:
Atmospheric Composition
Atmospheric Dynamics
Biosphere
Hydrolic Properties
Land Suface
Ocean Composition
Ocean Dynamics
Radiative and Imagery
Radiative Process
13993
5700
6200
5434
6111
5681
5389
6002
5392
3034
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YEAR SELECTION:
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Preview Bar: 60220 data sets
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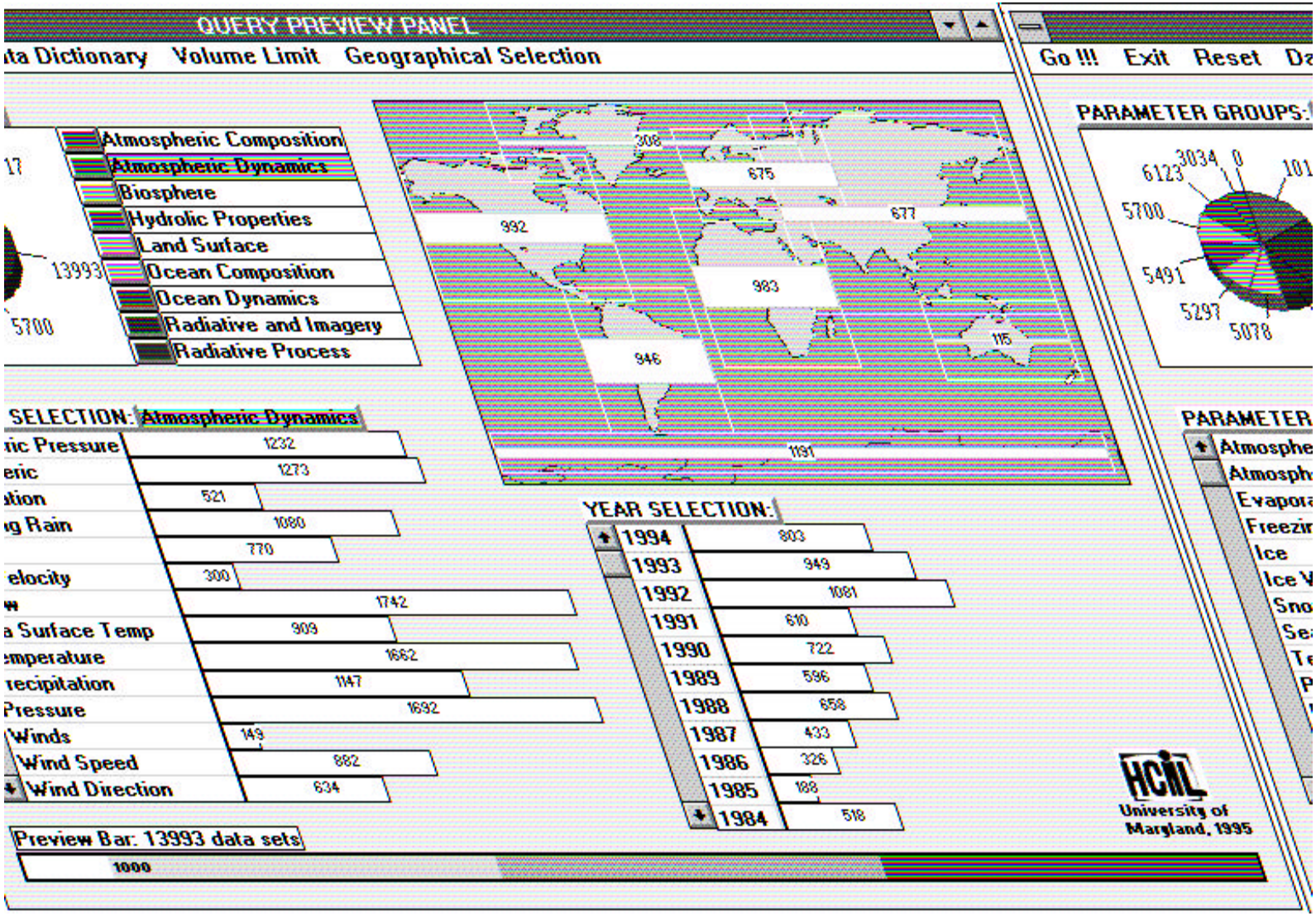
University of
Maryland, 1995


QUERY PREVIEW PANEL
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Volume Limit
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PARAMETER GROUPS:
Atmospheric Composition
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Biosphere
Hydrolic Properties
Land Surface
Ocean Composition
Ocean Dynamics
Radiative and Imagery
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Pressure 1692
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Wind Speed 882
Wind Direction 634
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677
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983
946
115
1191
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1990 722
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1985 188
1984 518
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University of Maryland, 1995
Preview Bar: 13993 data sets
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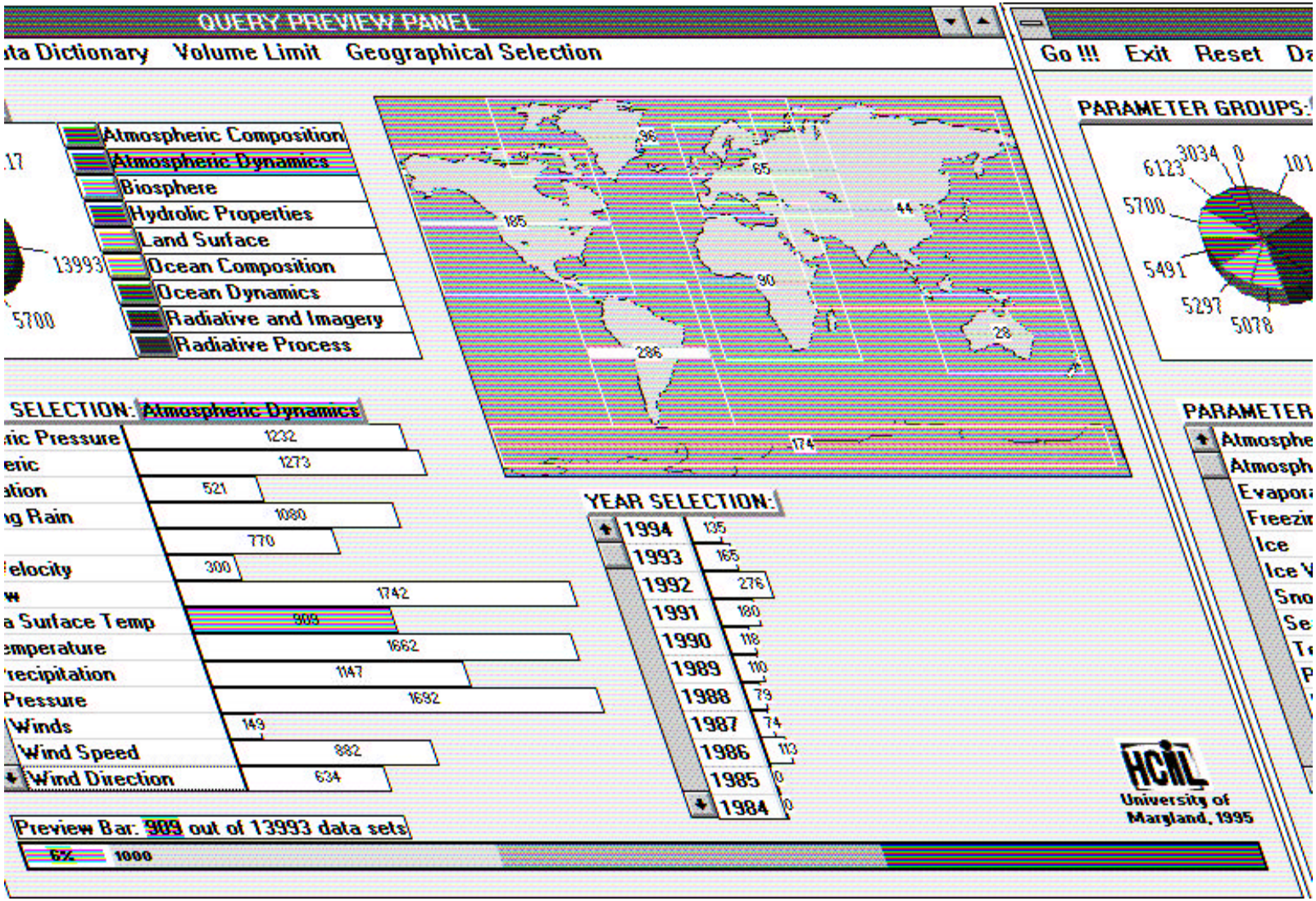
QUERY PREVIEW PANEL
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Volume Limit
Geographical Selection
Go !!!
Exit
Reset
Da
PARAMETER GROUPS:
Atmospheric Composition
Atmospheric Dynamics
Biosphere
Hydrolic Properties
Land Surface
Ocean Composition
Ocean Dynamics
Radiative and Imagery
Radiative Process
13993
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SELECTION: Atmospheric Dynamics
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Pressure 1692
Winds 149
Wind Speed 882
Wind Direction 634
YEAR SELECTION:
1994 135
1993 165
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1991 180
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Preview Bar: 989 out of 13993 data sets
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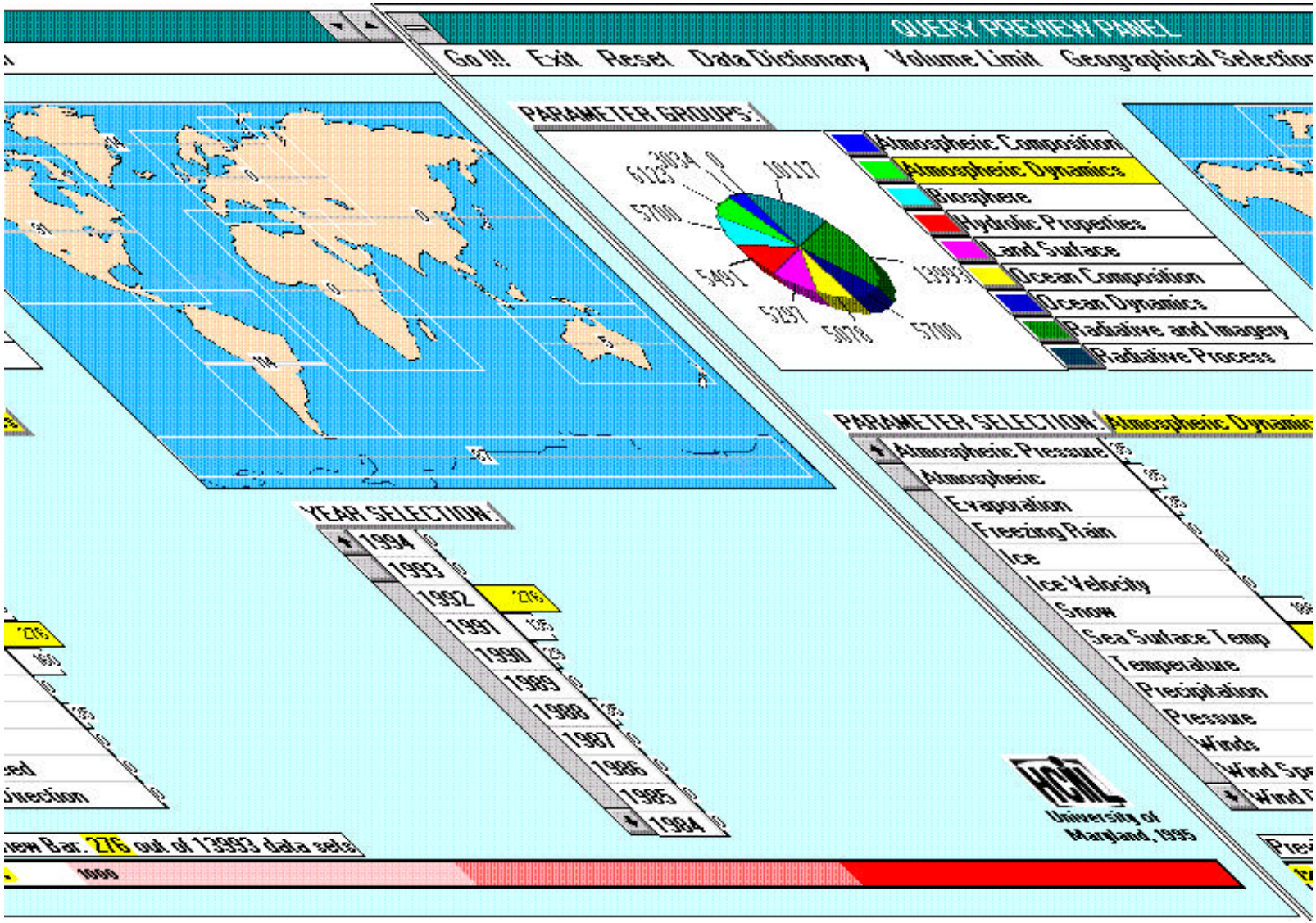
QUERY PREVIEW PANEL
Go !!!
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Reset
Data Dictionary
Volume Limit
Geographical Selection
PARAMETER GROUPS:
Atmospheric Composition
Atmospheric Dynamics
Biosphere
Hydrologic Properties
Land Surface
Ocean Composition
Ocean Dynamics
Radiative and Imagery
Radiative Process
PARAMETER SELECTION: Atmospheric Dynamics
Atmospheric Pressure
Atmospheric
Evaporation
Freezing Rain
Ice
Ice Velocity
Snow
Sea Surface Temp
Temperature
Precipitation
Pressure
Winds
YEAR SELECTION:
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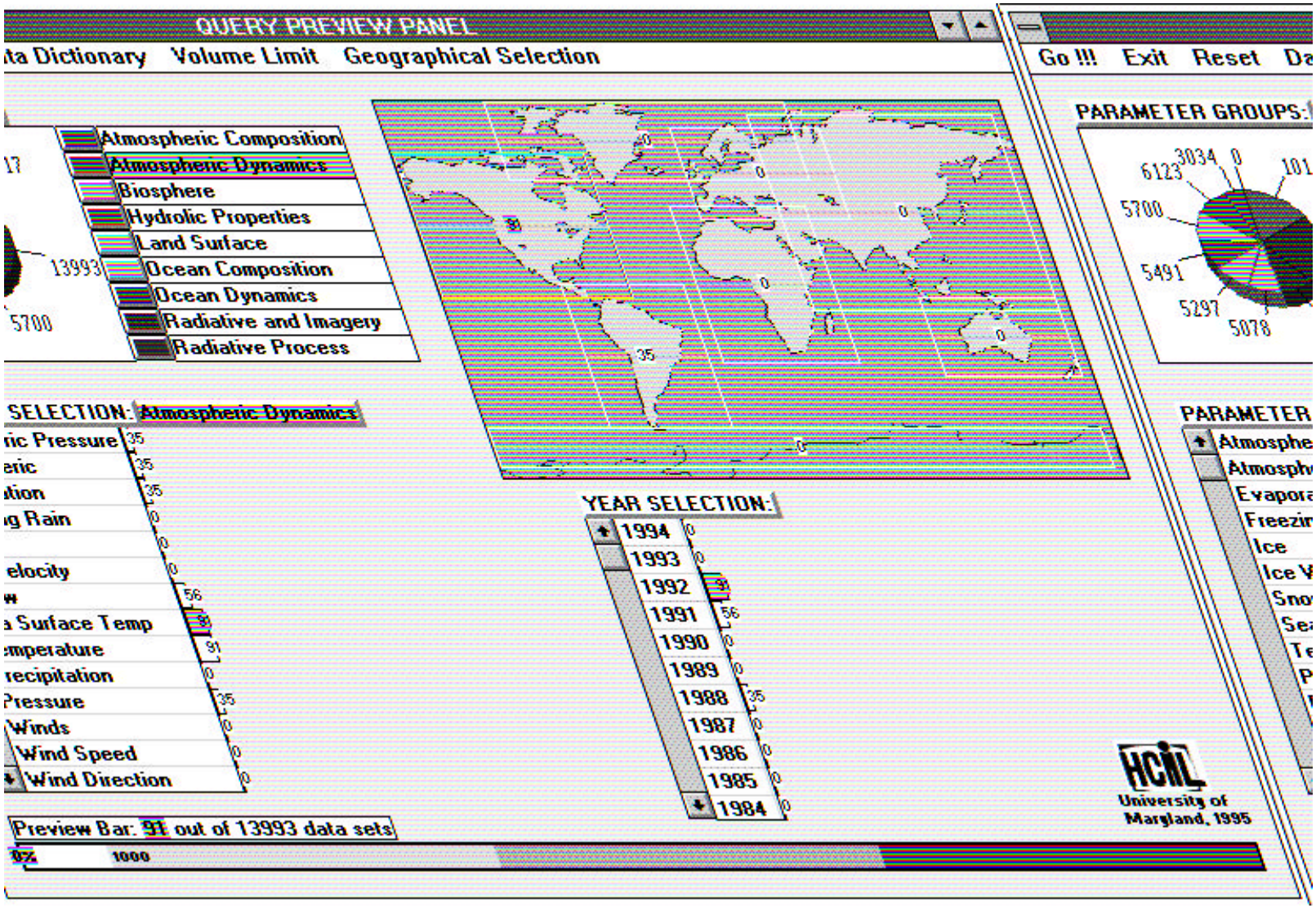
University of Maryland, 1995
out of 13993 data sets


QUERY PREVIEW PANEL
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Volume Limit
Geographical Selection
Go !!!
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Reset
PARAMETER GROUPS:
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Atmospheric Dynamics
Biosphere
Hydrolic Properties
Land Suface
Ocean Composition
Ocean Dynamics
Radiative and Imagery
Radiative Process
13993
5700
SELECTION: Atmospheric Dynamics
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Surface Temp
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recipitation
Pressure
Winds
Wind Speed
Wind Direction
YEAR SELECTION:
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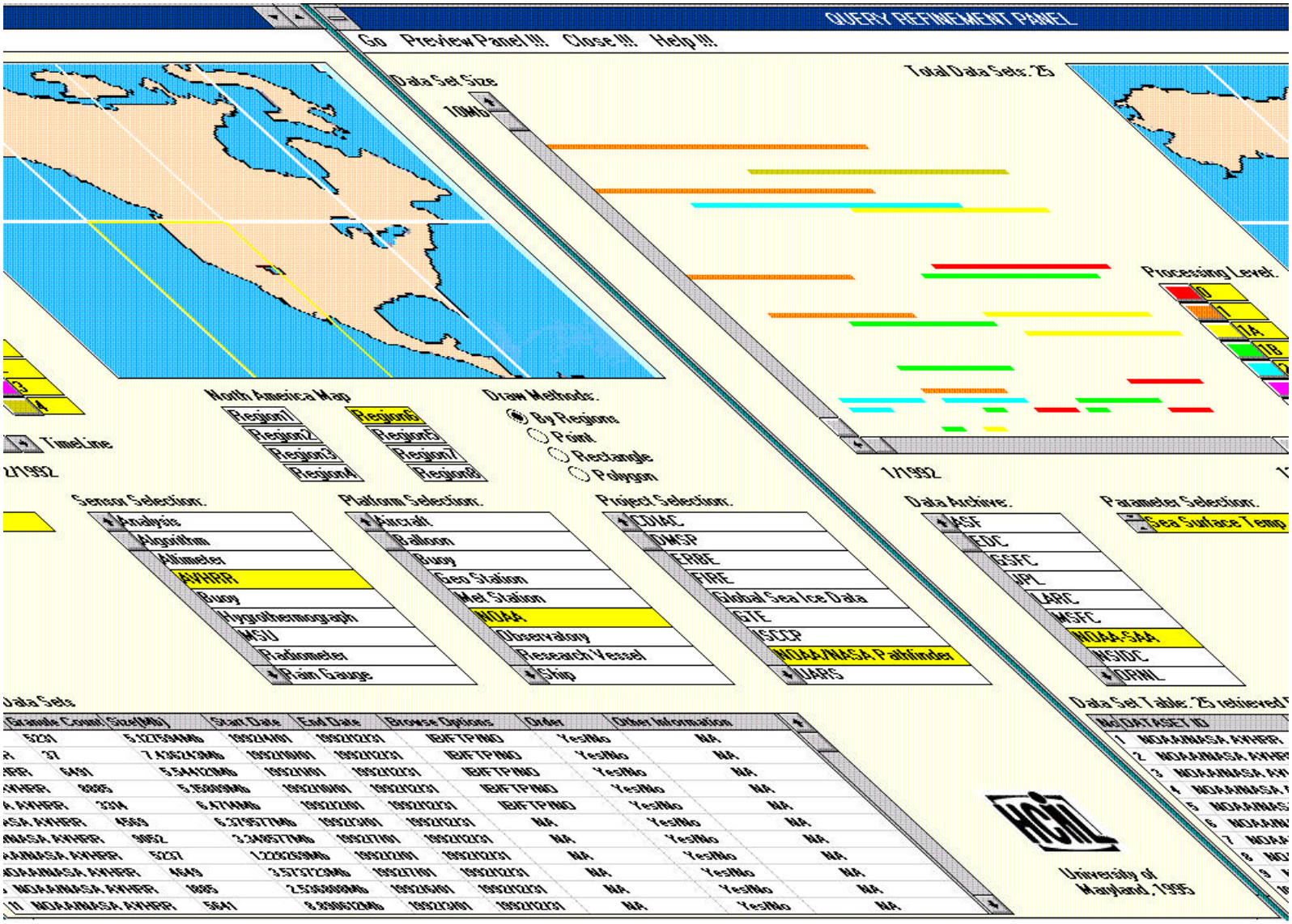
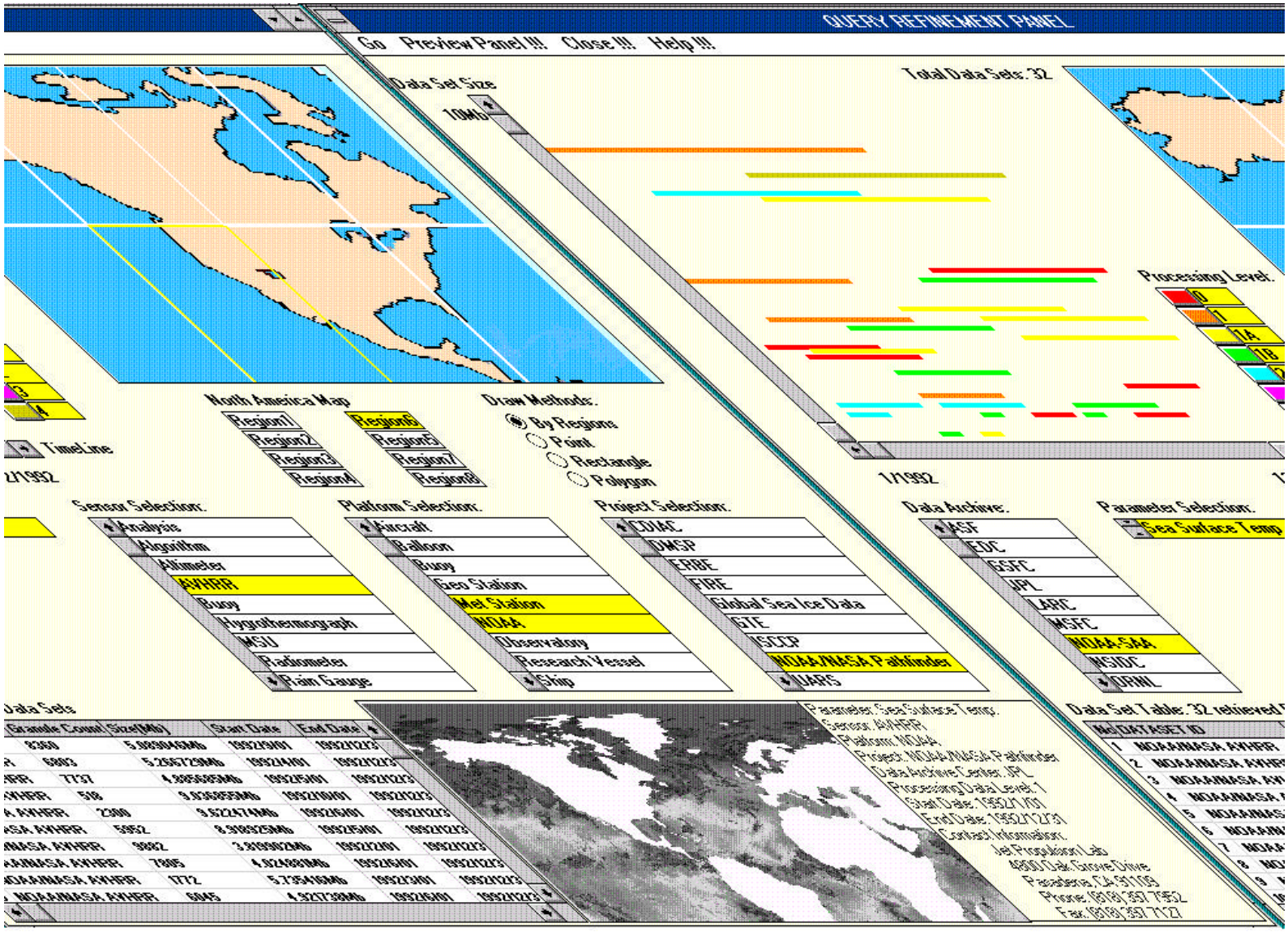
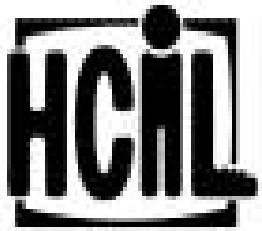
University of
Maryland, 1995
Preview Bar: 91 out of 13993 data sets
1000


QUERY REFINEMENT PANEL
Go
Preview Panel !!!
Close !!!
Help !!!
Data Set Size
Total Data Sets: 25
Processing Level
North America Map
Region1
Region2
Region3
Region4
Region5
Region6
Region7
Region8
Draw Methods:
By Regions
Point
Rectangle
Polygon
TimeLine
1/1992
1/1992
Sensor Selection:
Analysis
Algorithm
Altimeter
AVHRR
Buoy
Hygrothermograph
MSU
Radiometer
Rain Gauge
Platform Selection:
Aircraft
Balloon
Buoy
Ewo Station
Met Station
NOAA
Observatory
Research Vessel
Ship
Project Selection:
COADC
DMSP
ERBE
FIRE
Global Sea Ice Data
GTE
ISCCP
NOAA/NASA Pathfinder
UARS
Data Archive:
ASF
EDC
GSFC
JPL
LARC
MSFC
NOAA/SAA
NSIDC
ORNL
Parameter Selection:
Sea Surface Temp
Data Sets
Data Set Table: 25 retrieved
Granule Count
Size(Mb)
Start Date
End Date
Browse Options
Order
Other Information
DATASET ID
NOAA/NASA AVHRR
University of Maryland, 1995


QUERY REFINEMENT PANEL
Go
Preview Panel!!!
Close!!!
Help!!!
Data Set Size
Total Data Sets: 32
Processing Level
North America Map
Region1
Region2
Region3
Region4
Region5
Region6
Region7
Region8
Draw Methods:
By Regions
Point
Rectangle
Polygon
TimeLine
1/1992
Sensor Selection:
Analysis
Algorithm
Altimeter
AVHRR
Buoy
Hygrothermograph
MSU
Radiometer
Rain Gauge
Platform Selection:
Aircraft
Balloon
Buoy
Geo Station
Met Station
NOAA
Observatory
Research Vessel
Ship
Project Selection:
ECDIAC
DMSP
ERBE
FIRE
Global Sea Ice Data
ISTE
ISCCP
NOAA/NASA Pathfinder
UARS
Data Archive:
ASF
EDC
GSFC
JPL
LARC
MSFC
NOAA/SAA
NSIDC
ORNL
Parameter Selection:
Sea Surface Temp
Data Sets
Granule Count
Size(Mb)
Start Date
End Date
Data Set Table: 32 retrieved
Sel
DAT ASSET ID
Parameter: Sea Surface Temp.
Sensor: AVHRR
Platform: NOAA
Project: NOAA/NASA Pathfinder
Data Archive Center: JPL
Processing Data Level: 3
Start Date: 1985/01/01
End Date: 1985/12/31
Contact Information:
Jet Propulsion Lab
4800 Oak Grove Drive
Pasadena, CA 91109
Phone: (818) 397 7852
Fax: (818) 397 7172

Benefits Gained



- Provide useful statistical information
- Eliminate undesired data sets
- Reduce data sets to a manageable size
- Eliminate zero-hit queries
- Support dynamic queries
- Discover data set patterns and exceptions